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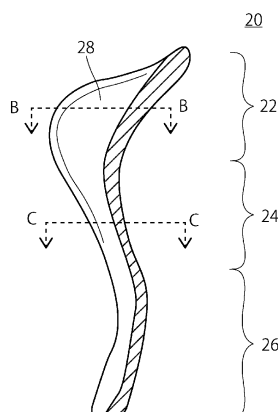
(54) **SHOE**

(57) A shoe is provided that has a structure less likely to become an obstacle when the shoe is worn, while improving the stability of the calcaneus.

A shoe includes a sole, an upper that is fixed to the sole and covers a foot of a wearer, and a heel member 20 provided on the heel side of a wearing opening of the

upper. The heel member 20 includes a guiding portion 22 that guides a heel of a wearer toward the wearing opening, and a fixing portion 26 that holds the guiding portion 22 with respect to the upper at least in a vertical direction. Accordingly, the wearing comfort of the shoe 10 can be improved.

FIG. 9



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Description

TECHNICAL FIELD

[0001] The present invention relates to a shoe.

BACKGROUND ART

[0002] Conventionally, shoes equipped with heel counters have been known to improve the stability of the wearer's calcanei and the retention of the heel shapes when the wearer is wearing the shoes. For a heel counter, a hard member is generally used, which has a shape extending along the outermost edge of the calcaneus in top view. Such a heel counter is often applied, for example, to a shoe used for exercise in which the stability of the wearer's heel portion is required, such as running and walking (see Patent Literature 1, for example).

PRIOR ART REFERENCE

PATENT LITERATURE

[0003] Patent Literature 1: Japanese Unexamined Patent Application Publication No. 2008-132227

SUMMARY OF INVENTION

TECHNICAL PROBLEM

[0004] Meanwhile, when putting on a shoe, there is a general problem of inserting the foot smoothly being difficult when the wearing opening of the shoe is tightened or has a hard structure.

[0005] The present invention has been made to solve such a problem, and a purpose thereof is to provide a shoe having a structure that enables smooth insertion of a foot when a wearer puts on the shoe, while improving the stability of the calcaneus.

SOLUTION TO PROBLEM

[0006] To accomplish the purpose above, the present invention includes a sole, an upper that is fixed to the sole and covers a foot of a wearer, and a heel member provided on the heel side of a wearing opening of the upper. The heel member includes a guiding portion that guides a heel of a wearer toward the wearing opening, and a holding portion that holds the guiding portion with respect to the upper at least in a vertical direction.

BRIEF DESCRIPTION OF DRAWINGS

[0007]

FIG. 1 is a top view of a foot skeleton.

FIG. 2 is a perspective view of a shoe.

FIG. 3 is a top view that shows the vicinity of a wear-

ing opening.

FIG. 4 is a top view that shows the vicinity of the wearing opening.

FIG. 5 is a perspective view of a heel member.

FIG. 6 is a side view of the heel member.

FIG. 7 is a top view of the heel member.

FIG. 8 is a rear view of the heel member.

FIG. 9 is a longitudinal sectional view of the heel member.

FIG. 10 is a sectional view taken along line B-B in FIG. 9.

FIG. 11 is a sectional view taken along line C-C in FIG. 9.

FIG. 12 is a longitudinal sectional view along a center line of the shoe.

FIG. 13 is a longitudinal sectional view along the center line of the shoe.

FIG. 14 is a longitudinal sectional view along the center line of the shoe.

FIG. 15 is a longitudinal sectional view of a shoe according to a modification.

FIG. 16 is a perspective view of a heel member according to a modification.

FIG. 17 is a perspective view of a heel member according to a modification.

FIG. 18 is a perspective view of a heel member according to a modification.

FIG. 19 is a perspective view of a heel member according to a modification.

FIG. 20 is a side view of a heel member according to a modification.

DESCRIPTION OF EMBODIMENTS

[0008] Definitions of terms used in this specification will be described first. In this specification, front and rear directions, width directions, and vertical directions may be used as terms indicating directions. These terms indicate directions viewed from a viewpoint of a wearer wearing a shoe placed on a flat surface. Accordingly, the front direction means a direction toward the toe side, and the rear direction means a direction toward the heel side. Also, a medial side and a lateral side of a foot may be used as terms indicating directions. The medial side of a foot means the inner side of the foot in a width direction, i.e., the big toe (first toe) side of the foot, and the lateral side of the foot means the side opposite to the medial side along a width direction.

[0009] Further, in the following description, directions may be described using a three-dimensional Cartesian coordinate system. In this case, the X-axis extends from the medial side toward the lateral side of the foot, the Y-axis extends from the heel side toward the toe side, and the Z-axis extends from the bottom surface side toward the upper side.

[0010] Before a shoe according to an embodiment is described, a foot skeleton relevant to the shoe according to the embodiment will be described with reference to

FIG. 1.

[0011] FIG. 1 is a top view of a foot skeleton. A human foot is mainly constituted by cuneiform bones Ba, a cuboid bone Bd, a navicular bone Be, a talus Bb, a calcaneus Be, metatarsal bones Bf, and phalanges Bg. In FIG. 1, a center line S indicates a center line of a shoe and extends along a middle part in a foot width direction. The center line S is assumed to be a region positioned on a straight line passing through a third metatarsal bone Bf3 and a medial process Be1 of calcaneal tuberosity of the calcaneus Be in a human body. FIG. 1 shows an area where the medial process Be1 of calcaneal tuberosity is assumed to be positioned, and this area may hereinafter be referred to as the "heel center Hc".

[0012] FIG. 2 is a perspective view of a shoe. As illustrated in FIG. 2, a shoe 10 includes an upper 12 and a sole 14. The upper 12 has a shape that wraps around a wearer's instep.

[0013] The upper 12 is joined to the sole 14 along the outer circumference of the sole 14. In a top part of the upper 12, a wearing opening 120 is provided to surround around the wearer's ankle. As the upper 12, various types of uppers may be employed, such as the upper of a laced shoe of which fit is adjustable with the lace, a slip-on shoe or a monosock shoe without a fastening means such as a lace, and the like.

[0014] The wearing opening 120 is an opening that receives a foot of a wearer putting on the shoe 10 in the order of the toe, a midfoot portion, and the heel. An edge part 122 of the upper 12 forming the wearing opening 120 has a wavy shape protruding upward at the toe and heel sides and downward at the left and right sides. The wearing opening 120 is formed to widen when force is applied from the inside. The widening of the wearing opening 120 means that the opening area of the wearing opening 120 expands. As a specific case where the wearing opening 120 widens, the case can be considered where, when force is applied from the inside of the wearing opening 120 to the edge part 122, which is formed to be stretchable, the edge part 122 stretches, or where the edge part 122 is deformed, and the opening area of the wearing opening 120 expands, as will be described later. The edge part 122 and the vicinity thereof (especially the toe side) may preferably have higher stretchability than other portions constituting the upper 12.

[0015] Also in the following case, it is considered that the shoe 10 has a structure in which the wearing opening 120 widens.

[0016] FIGS. 3 and 4 are top views that show the vicinity of the wearing opening. As illustrated in FIG. 3, the case can be considered where the wearing opening 120 includes two pieces 124R and 124L arranged with a cut in between. Each of the pieces 124R and 124L is pulled by a stretchable member 126 having elasticity, toward the inner side in a width direction. When the pieces 124R and 124L are pushed from the inside against the stretchable member 126 and separated respectively in the directions of arrows A and A' as shown in FIG. 4, the wear-

ing opening 120 widens.

[0017] The configuration of the expandable wearing opening 120 is not limited thereto; the edge part 122 may be configured only by a stretchable part, or other structures may be employed.

[0018] Referring back to FIG. 2, the sole 14 includes a midsole 16 and an outsole 18. In the following, although the sole shape and the like may be referred to, the term "sole" means the entire sole 14 including the midsole 16 and the outsole 18, unless otherwise explicitly specified. Also, the sole 14 may be constituted by either the midsole 16 or the outsole 18.

[0019] The midsole 16 functions to absorb impact, and part of or the entirety of the midsole 16 is formed of a soft material for absorbing impact, which may be a foam material, such as expanded EVA, urethane foam, or foamed thermoplastic elastomer, GEL, or cork, for example. The material of the midsole 16 may suitably have the Young's modulus of 10 MPa or less (when the strain is 10%) or a value measured using the ASKER Durometer Type C of 70 or less.

[0020] The outsole 18 is formed by shaping multiple rubbers into a predetermined shape. The outsole 18 is pasted over the bottom surface of the midsole 16 such as to cover at least part of the bottom surface of the midsole 16.

[0021] The shoe 10 also includes a heel member 20. The heel member 20 is provided inside the wearing opening 120. The heel member 20 is disposed along a heel side area of the edge part 122. The heel member 20 is fixed to at least one of the upper 12 or the sole 14. A top part of the heel member 20 protrudes above a top edge of the wearing opening 120.

[0022] FIG. 5 is a perspective view of the heel member, FIG. 6 is a side view of the heel member, FIG. 7 is a top view of the heel member, and FIG. 8 is a rear view (viewed from the heel side) of the heel member. FIG. 9 is a longitudinal sectional view of the heel member and shows a cross section along the middle in a width direction of the heel member. FIG. 10 is a sectional view taken along line B-B in FIG. 9, and FIG. 11 is a sectional view taken along line C-C in FIG. 9.

[0023] As illustrated in FIG. 5 through FIG. 8, the heel member 20 has a deformed shape formed by one plate-like member that is vertically continuous and partially curved. Being vertically continuous means that, when a longitudinal cross section of the heel member 20 is taken, at least one longitudinal cross section that is continuous over a vertical direction can be taken. Therefore, even if a hole penetrating through the heel member 20 in front and rear directions is formed, when at least one continuous longitudinal cross section can be taken, the heel member 20 is considered to be vertically continuous. The heel member 20 has a shape approximated to the vicinity of the heel of a wearer. Also, a horizontal cross section of the heel member 20 has a curved shape that opens on the toe side. The curved shape forms a U-shape, and the opening width of the curved shape varies depending

on the height position. The opening width is a distance between both ends of the receiving surface in a width direction on a horizontal cross section.

[0024] The heel member 20 has a height such that the top end is positioned higher than the wearing opening 120, and the lower end reaches at least the top surface of the sole 14. The heel member 20 is formed by solidifying a resin-based material, such as a chemical sheet. As the heel member 20, a pressed or an injection-molded resin material may also be used. Also, the heel member 20 has hardness such that it remains unbent against compression in a Z-axis direction even when the wearer's weight is applied from above. The hardness of the heel member 20 may suitably be 10 Mpa or higher, for example.

[0025] The heel member 20 includes a guiding portion 22, a heel holding portion 24 as an intermediate portion, and a fixing portion 26. The guiding portion 22, heel holding portion 24, and fixing portion 26 are integrally formed in this order along a Z-axis direction. The guiding portion 22, heel holding portion 24, and fixing portion 26 are concepts indicating areas of the heel member 20 formed integrally; accordingly, the guiding portion 22, heel holding portion 24, and fixing portion 26 need not necessarily be functionally or visually separated, and the dimensional proportions in a height direction need not be as illustrated.

[0026] The guiding portion 22 guides the wearer's heel in a predetermined direction when the wearer puts on the shoe 10. The motions of the wearer's putting on the shoe 10 include placing the toe inside the upper 12 with the ankle extended (hereinafter, referred to as a "first motion"), and moving the entire foot toward the toe side while gradually bringing the ankle angle closer to 90 degrees (hereinafter, referred to as a "second motion"). The motions of the wearer's putting on the shoe 10 terminate when the foot entirely comes into contact with the top surface of the sole 14, and the ankle angle reaches 90 degrees. The guiding portion 22 guides the heel toward the toe side during at least the second motion. The guiding portion 22 may guide the heel toward the toe side during the first and second motions.

[0027] The guiding portion 22 is formed in a height range where at least part of the guiding portion 22 protrudes upward mainly from the wearing opening 120. The guiding portion 22 includes a receiving surface 28. The surface of the receiving surface 28 is formed smoothly so that the wearer's foot will not be trapped.

[0028] As illustrated in FIG. 5 through FIG. 10, the receiving surface 28 has a shape like a funnel divided vertically. In other words, the receiving surface 28 has a shape as if the hatched cross section shown in FIG. 9 were rotated by a predetermined angle around a vertical axis that passes through the center of the heel. In top view, the receiving surface 28 has a curved shape forming a U-shape that opens on the toe side. The receiving surface 28 is formed by a curved surface inclined toward the toe side and the inner side (the side on which the center of the heel is located when viewed from the top).

The opening width of the receiving surface 28 is widest at the top side and tapers toward the lower side. The receiving surface 28 may preferably have a spread of 30 to 60 degrees around the heel center Hc (with respect to the center line S, 15 to 30 degrees on each side of the center line S). A rear end of the receiving surface 28 is positioned at the highest point in the heel member 20. Accordingly, when a wearer puts on the shoe 10, the rear end of the receiving surface 28 first comes into contact with the foot.

[0029] The receiving surface 28 may be a horizontal surface instead of an inclined surface. In other words, when the shoe 10 is placed on a virtual plane, the receiving surface 28 may be formed as a surface parallel to the virtual plane. This is because, since the wearer is moving the foot toward the toe side during the first motion or the second motion, even if the receiving surface 28 is a horizontal surface, the heel can be guided toward the toe side.

[0030] The heel holding portion 24 has a shape that corresponds to hollows on both sides above the wearer's calcaneus Be (hollows near both sides of the calcaneal tendon attachment site). The heel holding portion 24 fits the hollows of the wearer in a width direction. The heel holding portion 24 comes into contact with the vicinity of the heel of the wearer wearing the shoe 10 from both sides, thereby stabilizing the wearer's heel portion in the width directions. The heel holding portion 24 fits the wearer's calcaneus Be from above. Accordingly, the heel holding portion 24 comes into contact with a site corresponding to the calcaneus Be when the calcaneus Be is moved upward. This makes the shoe 10 less likely to come off.

[0031] The heel holding portion 24 is formed by a curved surface continuous with the receiving surface 28. The heel member 20 includes a constricted area, which corresponds to the heel holding portion 24 (see particularly FIG. 11). The heel holding portion 24 has a curved shape forming a U-shape that opens on the toe side. The opening width of the U-shape of the heel holding portion 24 is at least smaller than the opening width of the U-shape of the guiding portion 22. The opening width of the U-shape of the heel holding portion 24 may be smallest in the heel member 20 having a U-shape overall. The heel holding portion 24 may preferably have a spread of 10 to 30 degrees around the heel center Hc (with respect to the center line S, 5 to 15 degrees on each side of the center line S).

[0032] The fixing portion 26 as a holding portion makes the entire heel member 20 unable to move with respect to the upper 12 or the sole 14. The fixing portion 26 is fixed to at least one of the inner surface of the upper 12, the top surface of the sole 14, or an inner sole part (not illustrated). With the fixing portion 26 fixed to the upper 12 or the sole 14, the heel member 20 is made less likely to fall rearward during the wearer's motions for putting on the shoe 10 and while the wearer is moving wearing the shoe 10. When the fixing portion 26 is fixed to the upper 12 or the sole 14, the fixing portion 26 may be fixed

to the inner surface of the upper by means of a fixing means, such as an adhesive, or may be fixed by sewing. Also, a pocket may be provided on the inner surface of the upper 12, and the heel member 20 may be inserted into the pocket, for example. This enables replacement of the heel member 20.

[0033] The heel member 20 may be prepared after each dimension thereof, such as the opening width, is adjusted according to the intended use. Also, the heel member 20 may be formed in a custom-made form for each wearer by taking a mold of the wearer's heel.

[0034] There will now be described the functions of the shoe 10. Each of FIG. 12 through FIG. 14 is a longitudinal sectional view along the center line of the shoe. FIG. 12 illustrates the state of a wearer performing the first motion, and FIG. 13 illustrates the state of the wearer performing the second motion. FIG. 14 illustrates the state where the shoe 10 is worn.

[0035] As illustrated in FIG. 12, in the first motion, the wearer places the toe inside the upper 12 with the ankle extended. During the first motion, the wearer's heel may touch the guiding portion 22. When the wearer's heel touches the guiding portion 22, the heel slides toward the toe side on the receiving surface 28 of the guiding portion 22. Accordingly, the guiding portion 22 can guide the heel toward the toe side and, in turn, can guide the entire foot toward the toe side.

[0036] As illustrated in FIG. 13, in the second motion, the wearer moves the entire foot toward the toe side while gradually bringing the ankle angle closer to 90 degrees. When the wearer's heel touches the guiding portion 22 in this state, the heel slides toward the toe side on the receiving surface 28 of the guiding portion 22. Accordingly, the guiding portion 22 can guide the heel toward the toe side and, in turn, can guide the entire foot toward the toe side. When the wearer's heel touches the guiding portion 22, the wearer's weight is applied to the heel member 20; however, since the heel member 20 is formed of a hard material, the heel member 20 may be preferably configured such that it may fall slightly rearward around the fixing portion 26 but is not compressed and deformed. When the heel is guided by the guiding portion 22, the front of the wearer's ankle comes into contact with the edge part 122 of the wearing opening 120. When the toe side portion of the wearing opening is formed to be stretchable, the wearing opening 120 widens in the width directions. As the wearing opening 120 widens, the force pushing the heel member 20 rearward is reduced.

[0037] As illustrated in FIG. 14, when the wearer is wearing the shoe 10, the heel member 20 stands upright in a position along the wearer's heel. In this state, the heel holding portion 24 suitably be in contact with the wearer's heel and holding the heel. When the wearer moves, the foot intensely moves in the front and rear directions within the shoe 10; therefore, even if the heel holding portion 24 and the foot are slightly spaced apart when the wearer is at rest, the functions of the heel mem-

ber 20 will not be impaired.

[0038] As described above, with the shoe 10, the wearer can smoothly perform the motions for putting on the shoe 10. Such a configuration is not only suitable for running and walking shoes, but also for shoes for performances, such as dances, and shoes for elderly persons and children. Also, since the heel member 20 can hold the wearer's heel, the stability of the calcaneus can be improved.

[0039] Also, by disposing the rear end of the receiving surface 28 at the highest position in the heel member 20, the receiving surface 28 can be brought into contact with the foot first when the shoe 10 is worn. This can inform the wearer of the position of the receiving surface 28.

[0040] Also, by narrowing the opening width of the heel holding portion 24, the vicinities of both sides of the wear's calcaneal tendon attachment site can be held, thereby stabilizing the wearer's heel portion in the width directions.

[0041] There will now be described modifications of the present embodiment.

[0042] FIG. 15 is a longitudinal sectional view of a shoe according to a modification. As illustrated in FIG. 15, on a surface of the heel member 20, a buffer member 30 may be disposed. In the illustrated example, a sponge 32 and a covering 34 are used as the buffer member 30. Also, only the sponge 32 or only the covering 34 may be used as the buffer member 30. For the covering 34, synthetic fiber, artificial leather, or natural leather can be used. When the covering 34 is applied to the heel member 20, a corresponding fitting-type fixing means may be provided in each of the fixing portion 26 and the body of the upper 12, so that the fixing portion 26 can be fixed to the upper 12 by the fixing means.

[0043] When the covering 34 is applied to the heel member 20, by providing an opening/closing part, such as a fastener, on the covering 34, the heel member 20 can be made replaceable.

[0044] The buffer member 30 is disposed at least on the toe-side surface of the heel member 20. The buffer member 30 covers at least the heel holding portion 24. The buffer member 30 may also cover the entire heel member 20 including the guiding portion 22 and the fixing portion 26. When the sponge 32 is used as the buffer member 30, it is suitable to cover only the toe-side surface of the heel member 20. When the covering 34 is used as the buffer member 30, the entire heel member 20 may be covered. Providing the buffer member 30 prevents the hard heel member 20 from coming into contact with the foot directly and improves the wearing comfort of the shoe 10.

[0045] FIG. 16 through FIG. 18 are perspective views of heel members according to modifications. As illustrated in FIG. 16 through FIG. 18, the heel member may be provided with one or more through holes penetrating in front and rear directions.

[0046] In the example shown in FIG. 16, the heel member 20 includes a large through hole 36 formed from the

guiding portion 22 to the heel holding portion 24. The through hole 36 has an oval shape when viewed from the front. The shape of the through hole 36 is not limited to an oval shape and may be any shape that is not edgy and does not worsen the smoothness for a foot. Providing the through hole 36 enables adjustment of the strength of the heel member 20 on a horizontal cross section. Also, by providing the through hole 36, when the wearer's weight is applied to the heel member 20 during the second motion, for example, the opening width of the heel member 20 is made to widen slightly easily. Accordingly, the heel member 20 is less likely to become an obstacle when the wearer is performing the second motion. Also, when the buffer member 30 and the through hole 36 are employed together, the through hole 36 becomes an evacuation space for the buffer member 30. Accordingly, when the buffer member 30 is pressed by the heel, the buffer member 30 is deformed and partially evacuated into the through hole 36. Therefore, even when the buffer member 30 used is relatively thick, for example, the wearing comfort of the shoe 10 is less likely to be impaired.

[0047] In the example shown in FIG. 17, the heel member 20 includes two large through holes 38 formed from the guiding portion 22 to the heel holding portion 24. Also, in the example shown in FIG. 18, the heel member 20 includes multiple through holes 40 formed by the Delaunay triangulation. When the heel member 20 is viewed from the front, through holes 40 in the center have larger openings, and through holes 40 near the periphery have smaller openings. Such through holes 38 and 40 can be expected to have an effect equivalent to that of the through hole 36.

[0048] FIG. 19 is a perspective view of a heel member according to a further modification. As illustrated in FIG. 19, a heel member 42 includes a heel side holding portion 44 that holds the wearer's heel at the sides when the wearer's foot is placed on the sole 14 (see FIG. 2). The heel side holding portion 44 includes a left side holding portion 44L and a right side holding portion 44R extending from both sides of the fixing portion 26 toward the toe side. The heel side holding portion 44 has a three-dimensional curved surface shape that wraps around the wearer's heel from the rear and both sides, in cooperation with the fixing portion 26. The heel side holding portion 44 may be regarded as the fixing portion 26 with a widened opening width.

[0049] FIG. 20 is a side view of a heel member according to a further modification. As illustrated in FIG. 20, a heel member 46 includes a pair of ankle holding portions 48L and 48R that come into contact with the sides of the wearer's ankle when the wearer's foot is placed on the sole 14 (see FIG. 2). The ankle holding portions 48L and 48R are formed by a pair of arms extending from near the boundary between the guiding portion 22 and the heel holding portion 24 toward the toe side. The ankle holding portions 48L and 48R extend along both sides of the edge part 122 of the wearing opening 120 (see FIG. 2). Each of the ankle holding portions 48L and 48R

may extend from the inside of the upper 12, over the edge part 122, and along the outer surface of the upper 12. The ankle holding portions 48L and 48R function as heel counters. Therefore, providing the ankle holding portions 48L and 48R can improve the landing stability and support for walking.

[0050] The present invention is not limited to the aforementioned embodiment and modifications thereof, and changes may be appropriately made to each configuration in the embodiment without departing from the spirit of the present invention.

INDUSTRIAL APPLICABILITY

[0051] The present invention is industrially applicable to the field of shoes.

REFERENCE SIGNS LIST

[0052]

- 10 shoe
- 12 upper
- 14 sole
- 20 heel member
- 22 guiding portion
- 28 receiving surface
- 30 buffer member

Claims

1. A shoe, comprising:

- a sole;
- an upper that is fixed to the sole and covers a foot of a wearer; and
- a heel member provided on the heel side of a wearing opening of the upper, the heel member including:

- a guiding portion that guides a heel of a wearer toward the wearing opening; and
- a holding portion that holds the guiding portion with respect to the upper at least in a vertical direction.

2. The shoe according to claim 1, wherein

- the guiding portion includes a receiving surface with which the heel comes into contact, and the receiving surface is formed, when the shoe is placed on a virtual plane, in parallel to the virtual plane or on the toe side to face upward.

3. The shoe according to claim 1 or 2, wherein, in the guiding portion, an end on the heel side is positioned highest.

4. The shoe according to any one of claims 1 through 3, wherein

the guiding portion has a curved shape that opens on the toe side on a horizontal cross section, 5
the heel member includes, between the guiding portion and the holding portion, an intermediate portion that has a curved shape opening toward the toe side on a horizontal cross section and that at least partially comes into contact with a rear part of an ankle of a wearer, and at least part of an opening width of the intermediate portion is smaller than an opening width of the guiding portion. 15

5. The shoe according to claim 4, wherein, in the heel member, at least in a portion of the intermediate portion that comes into contact with a rear part of an ankle of a wearer, a buffer member is provided. 20

6. The shoe according to any one of claims 1 through 3, wherein the holding portion is fixed to at least one of the upper or the sole. 25

7. The shoe according to any one of claims 1 through 6, wherein the heel member includes a heel side holding portion that holds a heel of a wearer at the sides when the foot of the wearer is placed on the sole. 30

8. The shoe according to claim 4, wherein, in the heel member, a through hole of oval shape is formed to open continuously from the guiding portion to the intermediate portion. 35

9. The shoe according to any one of claims 1 through 8, wherein, in the upper, a toe side portion of the wearing opening is formed to be stretchable. 40

10. The shoe according to any one of claims 1 through 9, wherein the heel member is formed by one plate extending vertically continuously. 45

11. The shoe according to any one of claims 1 through 10, wherein the heel member is disposed inside the wearing opening, and a top end of the guiding portion is positioned higher than a top edge of the wearing opening. 50

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FIG. 1

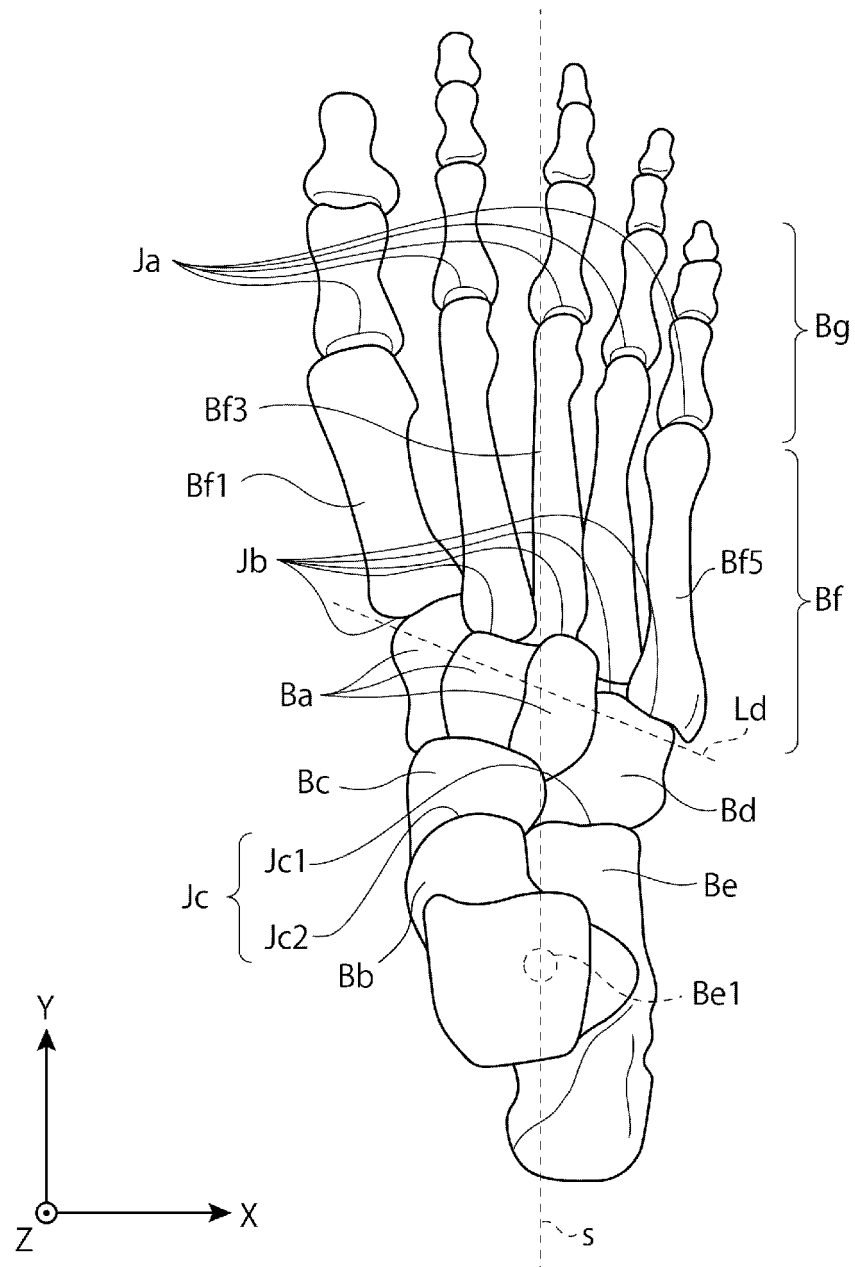


FIG. 2

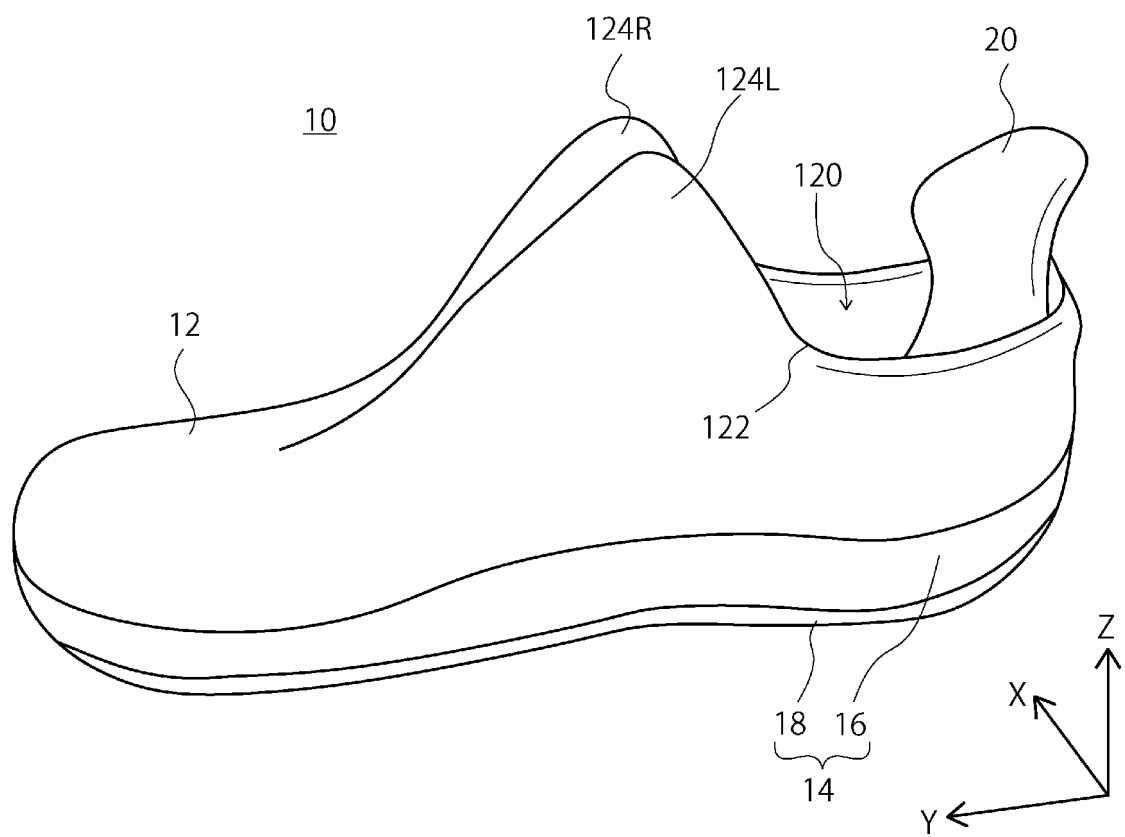


FIG. 3

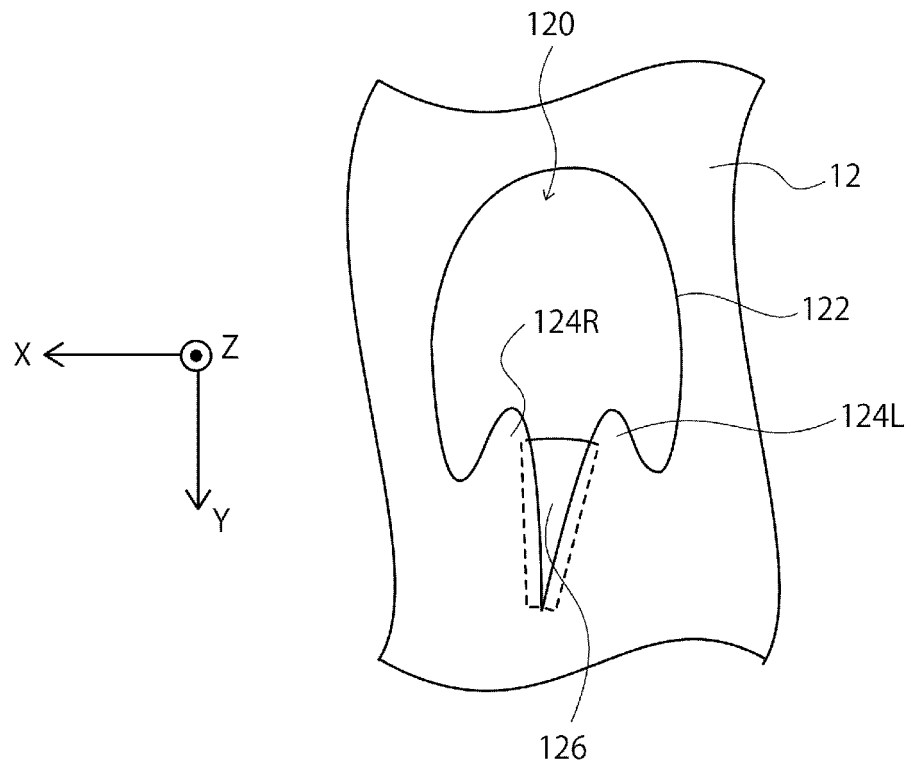


FIG. 4

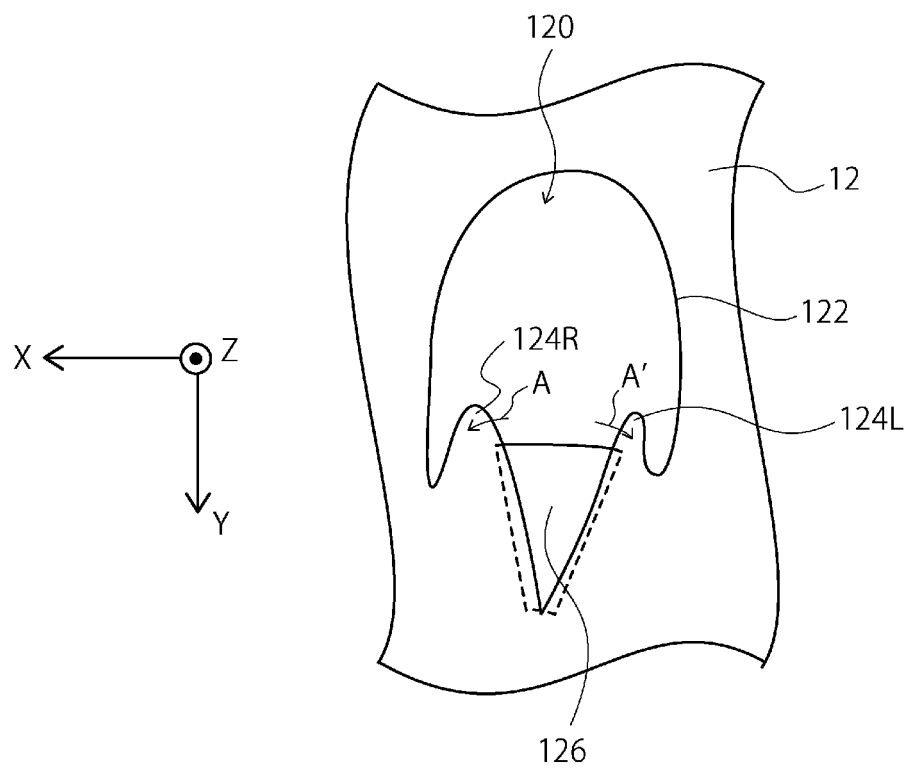


FIG. 5

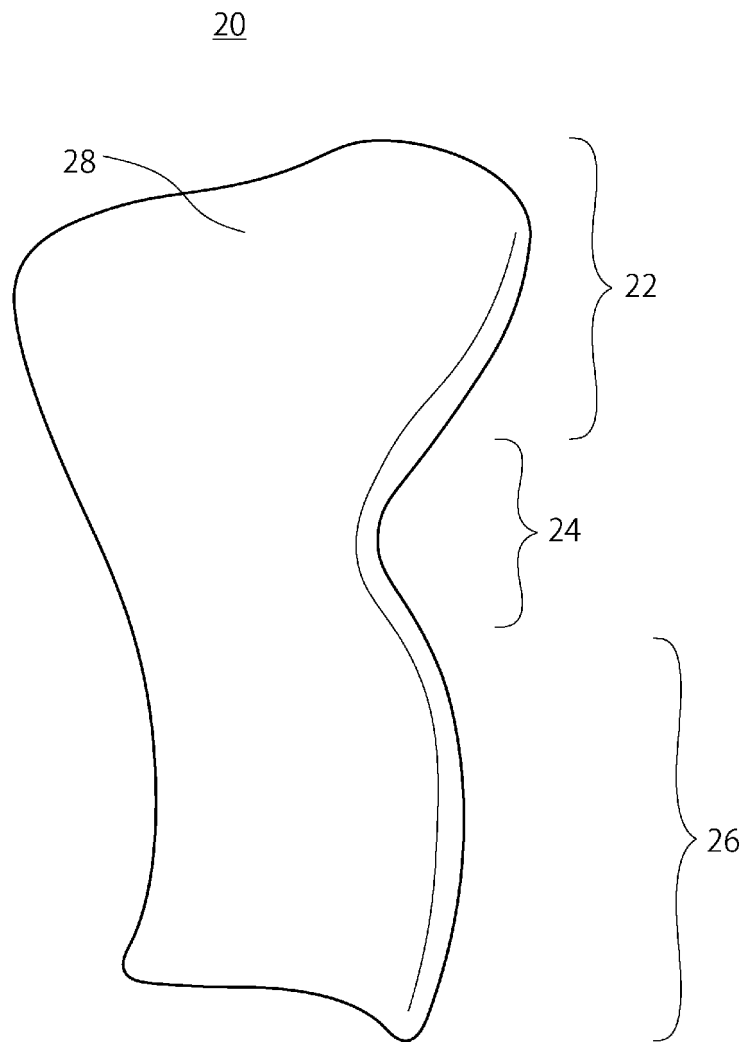


FIG. 6

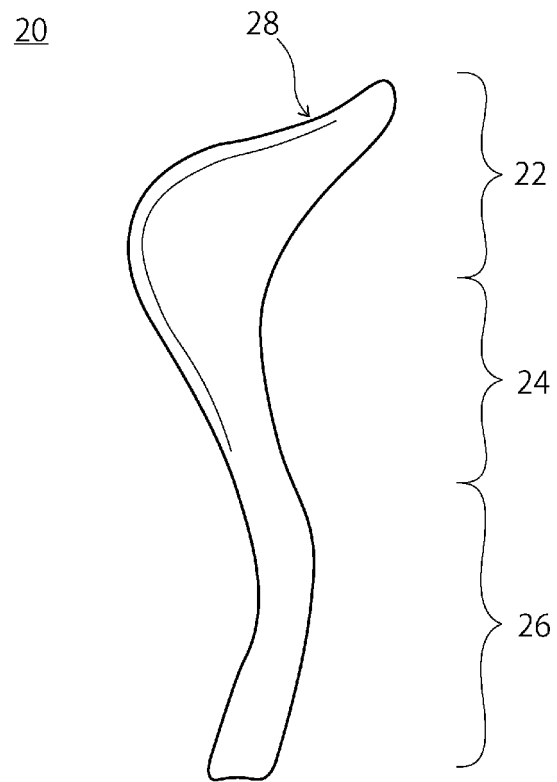


FIG. 7

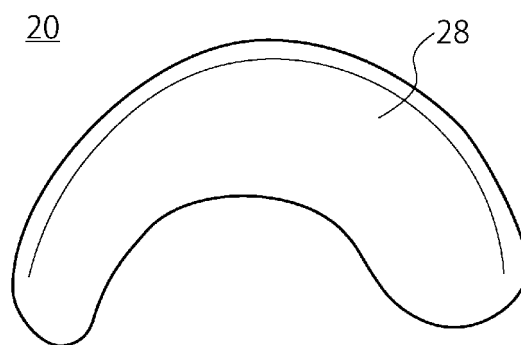


FIG. 8

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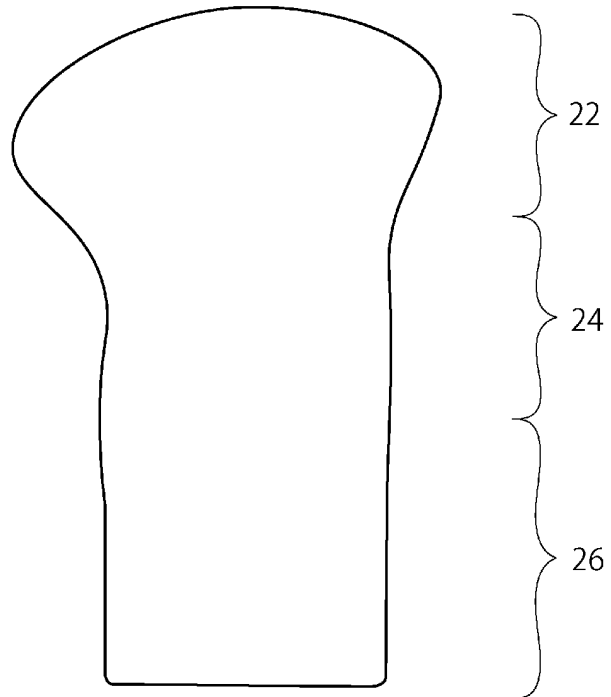


FIG. 9

20

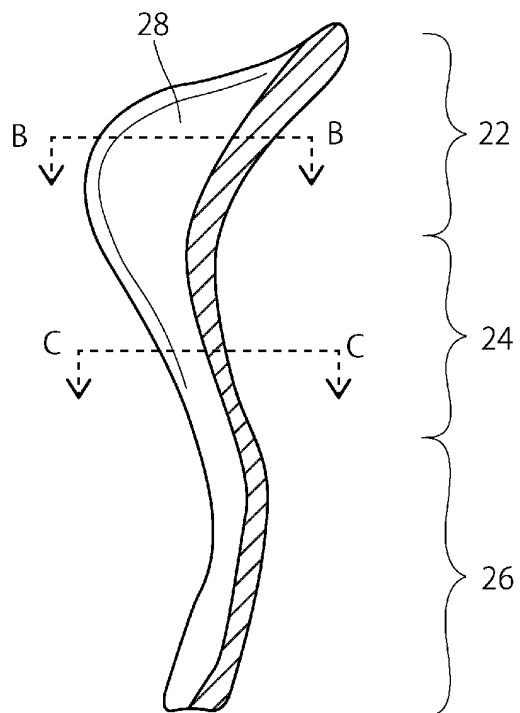


FIG. 10

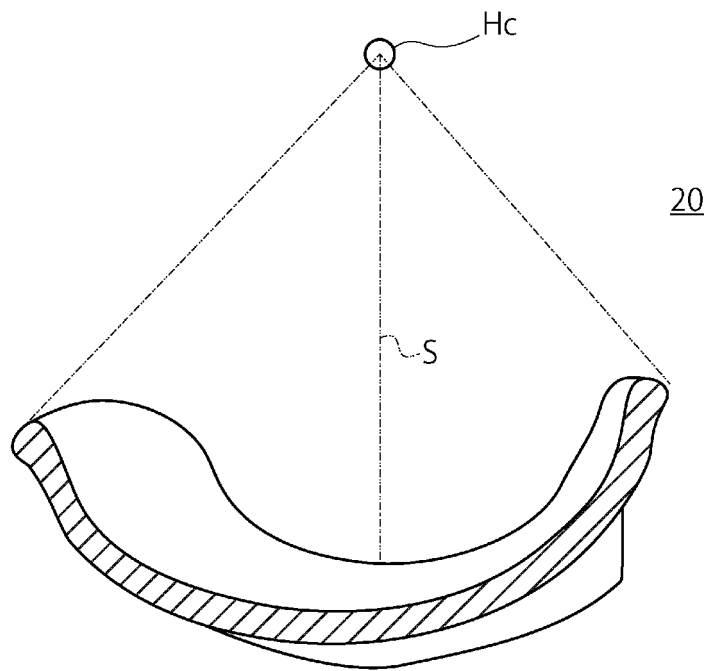


FIG. 11

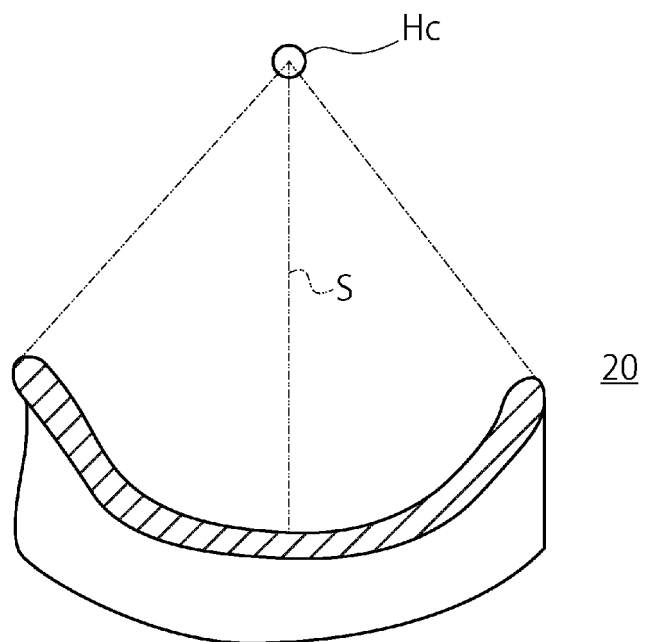


FIG. 12

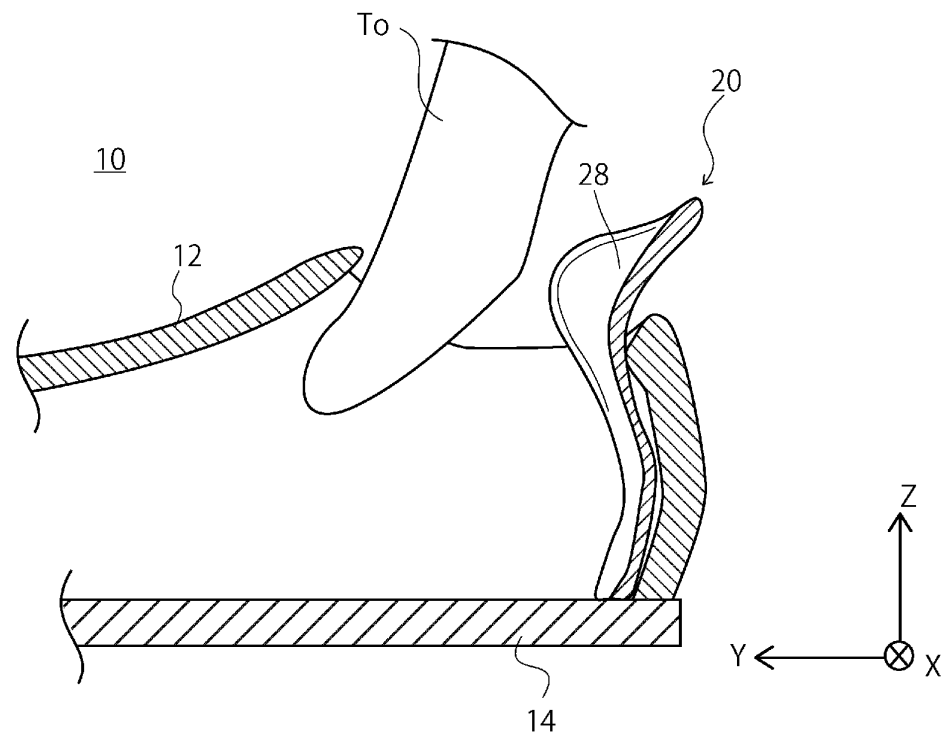


FIG. 13

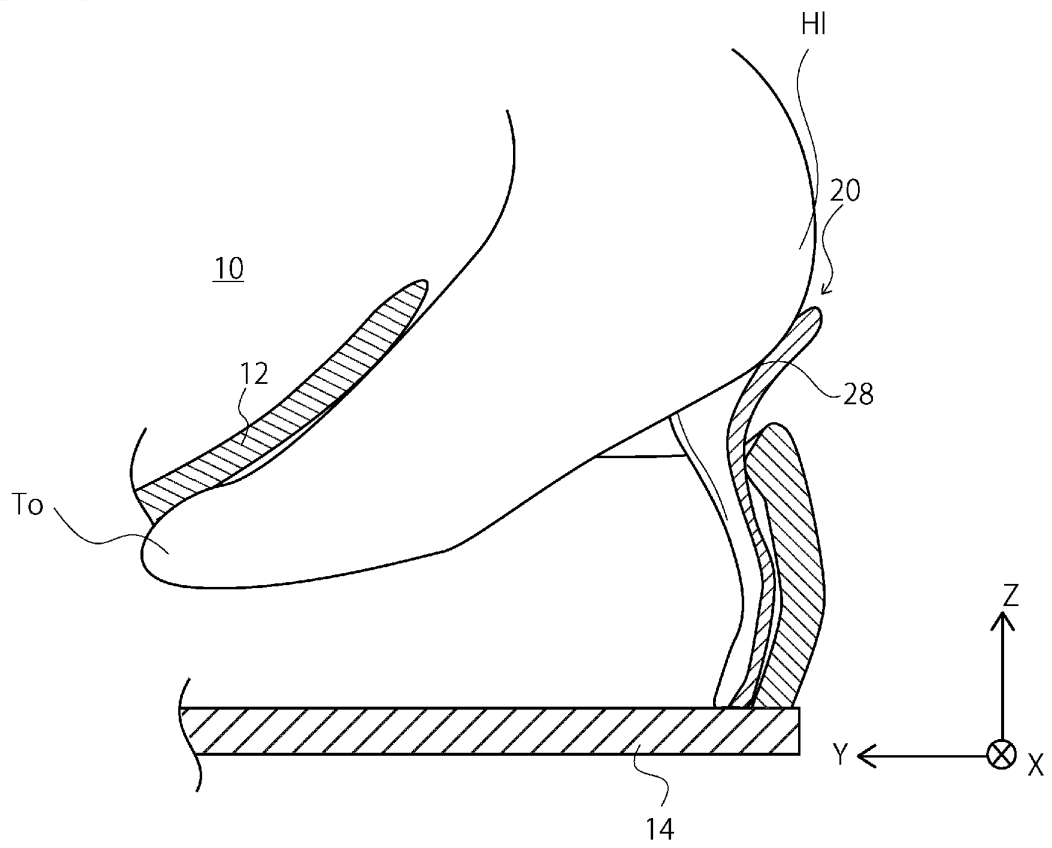


FIG. 14

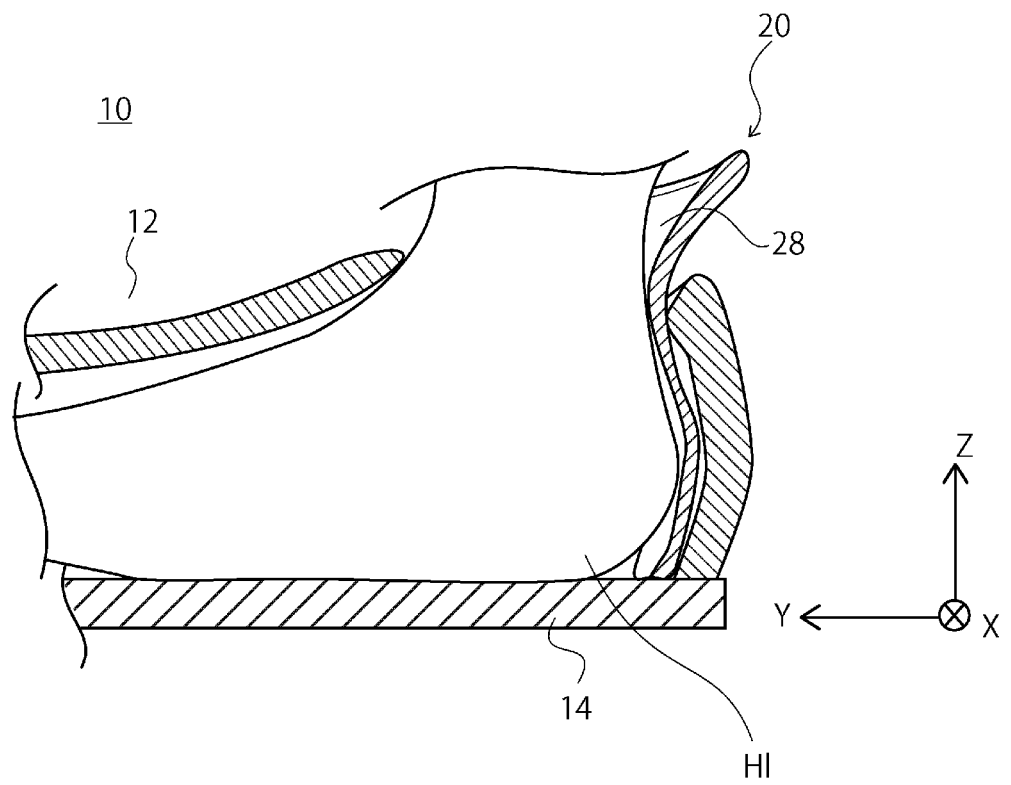


FIG. 15

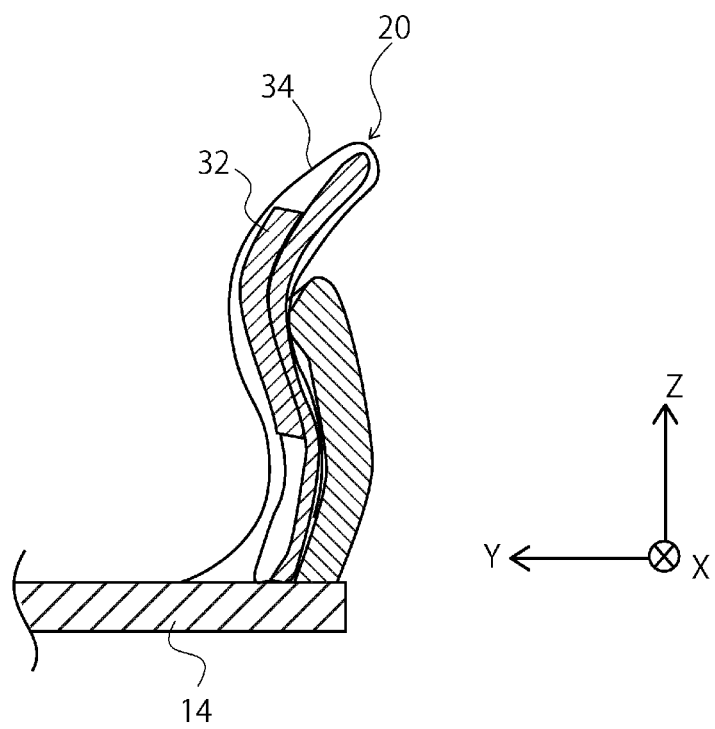


FIG. 16

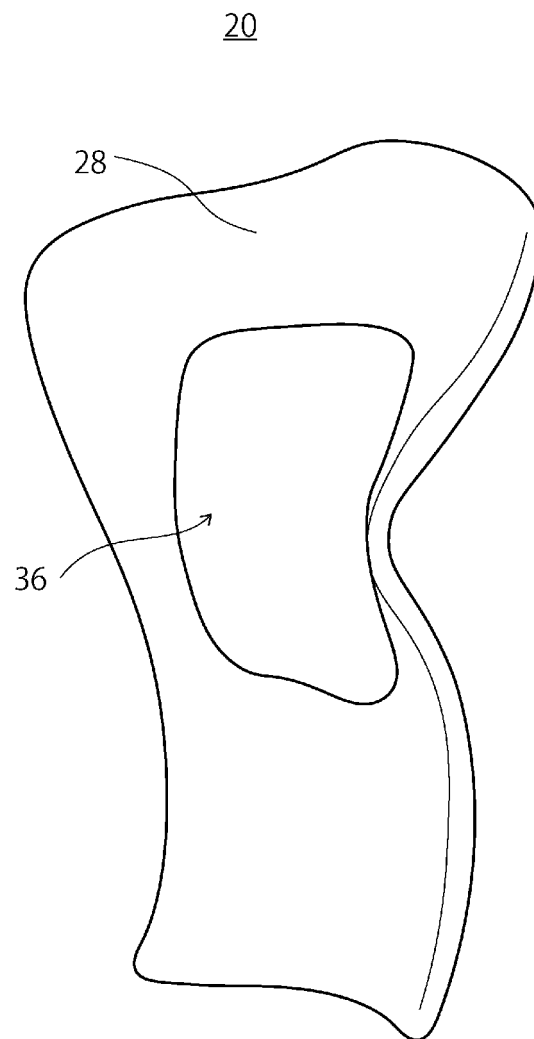


FIG. 17

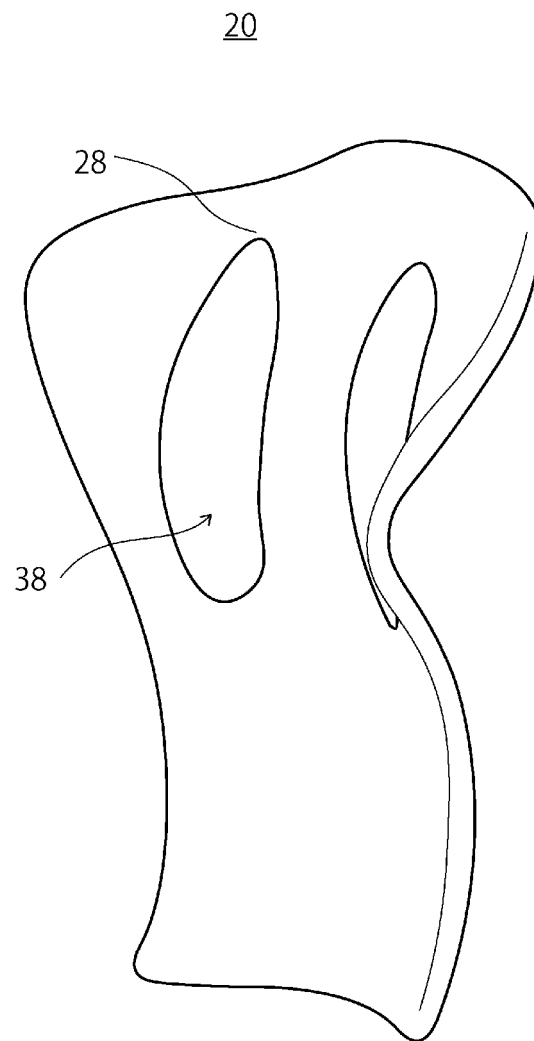


FIG. 18

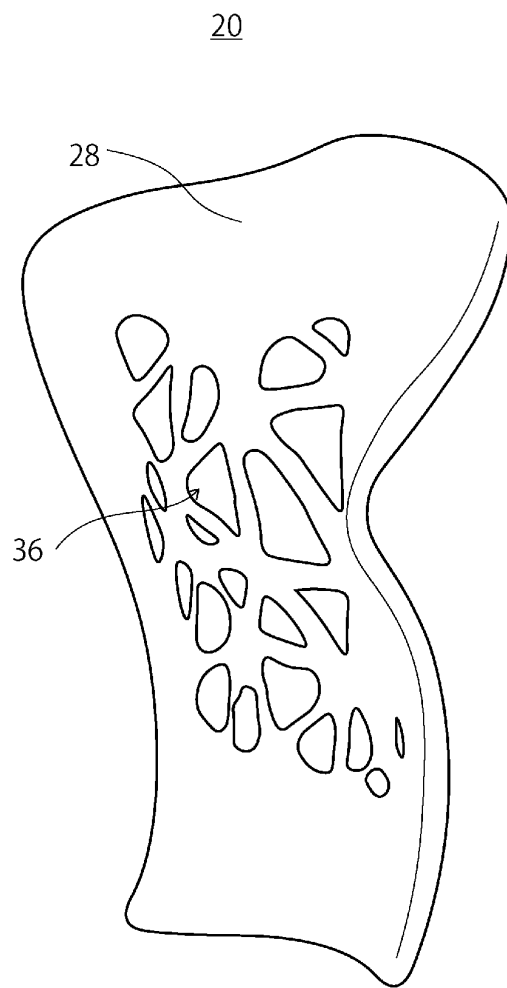


FIG. 19

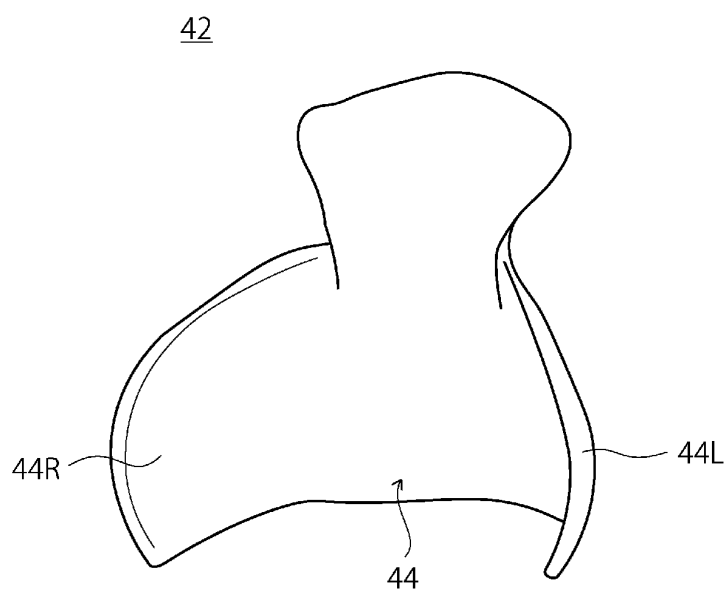
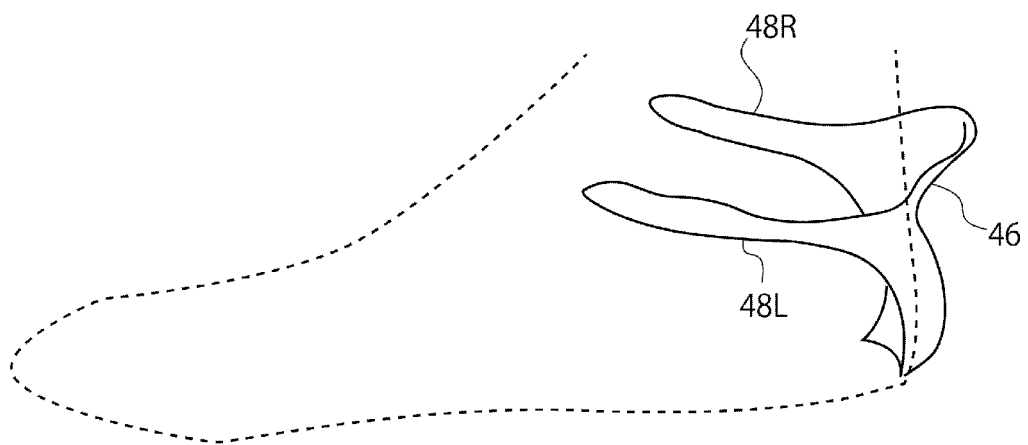


FIG. 20



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2020/046982

A. CLASSIFICATION OF SUBJECT MATTER

A43B 23/02 (2006.01) i

Fl: A43B23/02 103

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A43B23/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Published examined utility model applications of Japan 1922-1996

Published unexamined utility model applications of Japan 1971-2021

Registered utility model specifications of Japan 1996-2021

Published registered utility model applications of Japan 1994-2021

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 15549/1986 (Laid-open No. 128409/1987) (AKUNE, Mitsuaki) 14 August 1987 (1987-08-14) specification, pp. 1-2, fig. 1-4	1-4, 6-7, 10-11
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 183248/1984 (Laid-open No. 113609/1986) (ACHILLES CORPORATION) 18 July 1986 (1986-07-18) specification, pp. 1-4, fig. 1-3	5, 8-9
Y		5, 7, 9-11

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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Date of the actual completion of the international search
04 February 2021 (04.02.2021)Date of mailing of the international search report
16 February 2021 (16.02.2021)Name and mailing address of the ISA/
Japan Patent Office
3-4-3, Kasumigaseki, Chiyoda-ku,
Tokyo 100-8915, Japan

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2020/046982

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 167107/1987 (Laid-open No. 072107/1989) (ASAHI CORP.) 15 May 1989 (1989-05-15) specification, pp. 1-6, fig. 1-4	5, 7, 9-11
Y	JP 3-750 Y1 (NAKAI, Usaburo) 06 February 1928 (1928-02-06) page 1, fig. 1-5	8-11
Y	JP 3184605 U (OLD OXHIDE INTERNATIONAL B.V) 04 July 2013 (2013-07-04) paragraphs [0001]-[0018], fig. 1	8-11
Y	JP 54-019845 A (ADIDAS CHAUSSURES) 14 February 1979 (1979-02-14) pp. 1-3, fig. 1-11	8-11
Y	JP 10-862 Y1 (MURAKAMI, Junji) 26 January 1935 (1935-01-26) page 1, fig. 1-4	9-11
A	JP 2019-092988 A (AIKI SANGYO KK) 20 June 2019 (2019-06-20) entire text, all drawings	1-11

Form PCT/ISA/210 (continuation of second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/JP2020/046982

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
JP 62-128409 U1	14 Aug. 1987	(Family: none)	
JP 61-113609 U1	18 Jul. 1986	(Family: none)	
JP 1-072107 U1	15 May 1989	(Family: none)	
JP 3-750 Y1	06 Feb. 1928	(Family: none)	
JP 3184605 U	04 Jul. 2013	(Family: none)	
JP 54-019845 A	14 Feb. 1979	GB 2000958 A specification, pp. 1- 2, fig. 1-11	
		DE 2830398 A1	
		FR 2405666 A1	
JP 10-862 Y1	26 Jan. 1935	(Family: none)	
JP 2019-092988 A	20 Jun. 2019	JP 6529016 B1 entire text, all drawings	

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2008132227 A [0003]